

FORCED ACCESS TO TELECOMMUNICATIONS NETWORKS

The Canadian Radio-television and Telecommunications Commission (CRTC) has ordered telephone companies to sell to third-party retailers services matching the speed of their own retail Internet services on their next generation networks (NGNs).¹ No one believes that grocery chains should be forced to share their distribution networks with smaller competitors, or that Amazon.com should be forced to make its on-line distribution system available to small bookstores. However, many believe that the government should force telephone companies to allow third-party suppliers access to their facilities.



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Large telephone companies – the ones that previously benefited from government-granted, CRTC-regulated monopolies – have built networks of copper wire and switching equipment that brought telecommunication signals inside their customers' homes or offices. Starting in the 1990s, the government stopped protecting these telephone monopolies, and also forced them to lease unbundled phone lines to outside competitors at regulated prices. In bureaucratese, the former monopolies are now called "Incumbent Local Exchange Carriers" (ILECs) – firms like Bell in Québec or SaskTel in Saskatchewan. Through unbundling, their competitors – the so-called "Competitive Local Exchange Carriers" or CLECs, like for example Distributel or Primus – were able to offer their own telephone services by using the ILECs' networks.

In the meantime, two major changes have occurred in the telecommunications industry. First, while ILECs stagnated, competition from outside the box exploded. From 2003 to 2007, retail landline revenues remained roughly

constant and, within this category, wholesale wireline revenues (revenues from CLECs using the incumbents' networks) dropped by 3.7% per year. Over the same period, wireless revenues increased at an annual rate of 15.7% and Internet revenues by 11.3%; cable companies captured almost 18% of residential lines and some 55% of high-speed residential Internet subscribers.² The term "incumbent" has thus lost any clear meaning. Secondly, new network technologies based on optic fibre (and Internet Protocol) have started replacing the old copper wires.

A 2007 CRTC ruling was understood to exclude the NGNs from the mandated network-access requirements. However, Cybersurf, a competitor that wanted access to the new networks, persuaded the CRTC to force network owners to offer the same speed to competitors purchasing wholesale services – which means forced access to the optic fibre networks at regulated prices.

Economists have argued that this policy will reduce the network owners' incentives to invest in NGNs.³ We must of course remember that consumer welfare, not



1. CRTC, *Cybersurf Corp.'s application related to matching service speed requirements for wholesale Internet services*, Telecom Decision 2008-117, December 2008, <http://www.crtc.gc.ca/eng/archive/2008/dt2008-117.htm>; CRTC, *Cybersurf's application related to the implementation of Telecom Decision 2008-117 regarding the matching speed requirement*, Telecom Decision 2009-111, March 2009, <http://www.crtc.gc.ca/eng/archive/2009/2009-111.htm>.
2. CRTC, *Communications Monitoring Report*, July 2008 (updated September 2008), <http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2008/cmr2008.htm>, pp. iv, 197, 207, 225.
3. Thomas W. Hazlett, "Rivalrous Telecommunications Networks With and Without Mandatory Sharing," *Federal Communications Law Journal*, Vol. 58, No. 3 (June 2006), pp. 477-509; Debra J. Aron and Robert W. Crandall, *Investment in Next Generation Networks and Wholesale Telecommunications Regulation*, White Paper, November 2008.

investment per se, is the ultimate goal of economic activity. Economic efficiency in terms of individual preferences is what matters and what must serve as the criterion for evaluating forced network access.

The Coase Theorem

To analyze such basic efficiency issues, the approach developed by Nobel Prize-winning economist Ronald Coase half a century ago and called “the Coase theorem”⁴ is especially useful.

The initial question is, how can we make sure that scarce resources (say, land or a telecommunications network) are allocated to their most valued uses? Let’s take a simple example and ask, what sort of institutions can insure that wood is used in the most valuable goods it can produce: should paper or lumber be produced, and in what quantities?

Here is the logic of the Coasian reasoning. Suppose that consumers are willing to pay more for the paper made with one tree than what consumers of lumber are ready to pay. Paper producers will then make more profits out of a tree (say, \$125 per tree) than lumber producers (\$100, for example). Now consider a tree owned by a lumber producer. The paper producer is willing to pay up to \$125 for it while the lumber producer can only expect to make \$100 in profits out of it in his own business. Consequently, the lumber producer will sell the tree to the paper producer. Alternatively, suppose the same tree is originally owned by the paper producer, who would sell it for anything more than \$125. Since the lumber producer doesn’t want to pay more than \$100, the ownership of the tree will remain with the paper producer. Thus, whoever originally owns it, the tree will end up, through exchange if necessary, in the hands of the paper producer – the one who can create the most value out of it. The Coase theorem says that, for economic efficiency, it does not matter who has the original property rights.

Two conditions are necessary for the Coase theorem to apply. The first is that transaction costs not be too high. “Transaction costs” refer to the costs incurred by the potential trading partners in finding each other, bargaining, reaching an

agreement and enforcing this agreement. A second condition for the Coase theorem’s validity is that property rights, whoever has them, be well defined. If a tree belongs to nobody, or nobody knows to whom it belongs, there is no opportunity for exchange and, thus, no automatic way for the resource to end up in the hands of the producers (and, ultimately, the consumers) who value it most. Environmental problems arise when transaction costs are high or with resources that lack well defined property rights.

From theory to reality

The application of the Coase theorem to issues of telecommunications network sharing should now be easy to understand. Not so coincidentally, Coase published a seminal article on telecommunications⁵ one year before his classic on the Coase theorem. In the 1959 article, Coase argued that frequencies on the electromagnetic spectrum should be auctioned off to the highest bidders, contrary to the bureaucratic and political allocation methods that had developed since the late 1920s. With an auction mechanism and complete property rights, Coase argued, the electromagnetic spectrum would be allocated to its most valued uses because the winning bidders would be those for whom, and for whose customers, the frequencies are worth the most. It took four decades for Coase’s auction proposal to gain currency, albeit only partly.

Now consider the simple case of a network of copper wires, optic fibre cables or any other enclosed medium. Suppose that, with all revenues and costs considered, a phone line or bandwidth brings in a \$50 annual profit to the network owner, while a competitor renting it can make a \$75 profit. If the network owner is a profit maximizer (which business firms are), he will unbundle and lease the element at any price

Economists have argued that forcing owners to share access to their infrastructure will reduce their incentive to invest in next generation networks.

4. Ronald H. Coase, “The Problem of Social Cost,” *Journal of Law and Economics*, Vol. 3 (October 1960), pp. 1-44.

5. Ronald H. Coase, “The Federal Communications Commission,” *Journal of Law and Economics*, Vol. 2 (October 1959), pp. 1-40.

between \$50 and \$75. It is better to make more money leasing than selling to one's own customers at lower profits. If, however, the competitor could only make a \$25 profit, he would not be able to persuade the network owner to lease. In either case, the efficient solution applies: the network element is allocated to the user for whom it creates the most value, in accordance with the Coase theorem. Provided only that network owners and competitors can bargain freely, resource allocation will be optimal.

There is evidence that such exchanges already occur in the services that ILECs are not forced to sell to CLECs. It is estimated that between one half and two thirds of ILECs' revenues from wholesale clients are from non-mandated services.⁶ The Coase theorem is not mere theory; it can be seen operating in the telecommunications industry.

The sharing of antennas and tower sites provides another illustration of the Coase theorem at work. Until just a few years ago, sharing was encouraged by Industry Canada, but was often more "a policy 'expectation' than a policy requirement". The telecommunications companies had not waited for coercion to enter into sharing agreements whenever they were efficient, that is, profitable: 32% of all cellular sites were shared.⁷

Whether or not entry in telecommunications by leasing network services is efficient cannot be determined by bureaucratic processes but only by actual market transactions. If the new entrant is able to pay the price of entry, then entry is efficient; if he is not able to entice the network owner to strike a mutually profitable bargain, then entry would be inefficient. There is always the alternative of a new entrant building his own network, if he is efficient enough. The Coase theorem contradicts what the CRTC seems to consider efficiency.⁸ The same argument applies, of course, to both copper and NGN networks, even if the current debate only relates to the latter.

There is thus no need for mandating access and regulating its price. Since doing so amounts to giving third parties a property right in the networks, one might be tempted to argue that the Coase theorem suggests it doesn't matter: a network owner could just buy back his property right if it is efficient to do so. However, not only would this solution probably be illegal under current laws, but companies that have no intention of purchasing access to a network would then have an incentive to claim they do just as a way of being bribed out.

Defining and protecting property rights provide the main justifications for the existence of the state. But in the matter under consideration, the CRTC seems to be doing the opposite: by creating regulatory uncertainty, it undermines well-defined property rights.

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The market as final arbiter

Promoting competition is the official reason for forcing the former telephone monopolies to let their competitors use their networks. This justification, however, raises many problems.

On a theoretical level, it relies on a static and contrived conception of competition. In reality, competition from outside a narrowly defined market is often greater than competition within the market itself.⁹ This is exactly what we have observed in telecommunications. Despite their large networks, the former telephone monopolies have seen their traditional markets eroded by cable companies, cell phone competitors, and the Internet. Remember that the incumbent telephone companies have a share of the Internet access market that hovers around a mere 50%.¹⁰ Except for remaining regulatory restraints, all telecom companies now face a highly competitive marketplace.

Substantial economic literature has developed to devise formulas (like, for example, the *efficient component pricing rule*) for determining "optimal" access prices when network

6. Bell Aliant Regional Communications, Bell Canada, Saskatchewan Telecommunications and Télébec, *Telecom Public Notice CRTC 2006-14: Review of Regulatory Framework for Wholesale Services and Definition of Essential Services – Reply Argument*, December 2007, par. 71, http://www.crtc.gc.ca/public/partvii/2006/8663/c12_200614439/840332.zip.

7. David A. Townsend, *Report on The National Antenna Tower Policy Review*, Industry Canada, December 2004, [http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/antennareport-e.pdf/\\$FILE/antennareport-e.pdf](http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/antennareport-e.pdf/$FILE/antennareport-e.pdf).

8. CRTC, *op. cit.*, footnote 2, par. 21.

9. Neil Quigley, *Dynamic Competition in Telecommunications*, C.D. Howe Institute, February 2004, http://www.cdhowe.org/pdf/commentary_194.pdf.

10. CRTC, *op. cit.*, footnote 2, pp. 225-226.

access is mandated.¹¹ These attempts raise several issues, including the ability of politicians and bureaucrats to determine what maximizes “social welfare” (which is the goal of optimal rules), the incentives of regulation bureaus to pursue such a goal,¹² and the impossibility of gathering all the necessary information. Note also that transaction costs and asymmetric information are often greater in political dealings than in economic transactions.¹³ In practice, the rules adopted by regulation bureaus like the CRTC are usually the simplest, the least market-oriented and the least defensible ones.¹⁴

Even if competition is not perfect by some ethereal standards, regulation is not perfect either. Regulatory failure is at least as common as market failure. What Coase wrote in his 1959 telecommunications article is still relevant. In reply to the criticism that auctioning the electromagnetic spectrum was (pejoratively) a “novel theory”, he wrote: “This ‘novel theory’ (novel with Adam Smith) is, of course, that the allocation of resources should be determined by the forces of the market rather than as a result of government decisions. Quite apart from the malallocations which are the result of political pressures, an administrative agency which attempts to perform the function normally

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carried out by the pricing mechanism ... cannot, by the nature of things, be in possession of all the relevant information possessed by the managers of every business which uses or might use radio frequencies, to say nothing of the preferences of consumers for the various goods and services in the production of which radio frequencies could be used.”¹⁵

In general, maximum value or maximum economic opportunities are created by letting market participants bargain between themselves, not by imposing involuntary “contracts” on some of them. Mandated network access redistributes profits from network owners to their competitors, dampens investment incentives, and reduces consumer welfare. Whether such redistribution is good or bad is ultimately an ethical, not economic, issue, and should not masquerade under the pursuit of efficiency.

Special interests hide under the mantle of “the public interest”.¹⁶

Adam Smith noted, “I have never known much good done by those who affected to trade for the public good”.¹⁷ In this as in other matters, the public interest requires that the arbiter of clashing private interests be free exchange and freedom of contract.



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14. See Boyer *et al.*, *op. cit.*, footnote 11.
15. Ronald H. Coase, *op. cit.*, footnote 5, p. 18.
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